

RENEWABLE RESOURCES

FOR HALF OF THE STATE'S ELECTRICITY BY 2030

To meet our climate change goals, we must derive 50 percent of the state's electricity from renewable resources by 2030. We are already well on our way as the state currently uses renewable resources for about 25 percent of its electricity use and is on a trajectory to use 33 percent by 2020. California is a leader in reducing greenhouse gases from electricity generation while maintaining an affordable and reliable electricity system.

BENEFITS FROM RENEWABLES FOR HALF OF ELECTRICITY USE BY 2030

Renewables have created thousands of jobs, reduced harmful air pollutants, lowered carbon pollution, and led to greater diversity and resilience in our energy supply.

Meet Climate Change Goals and Health Standards

- » Increasing renewable resources to 50 percent of the state's electricity consumption by 2030 sets California on path to meet its 2050 climate change goals
- » Using renewable resources could help reduce emissions from the transportation sector as increasing numbers of Californians drive electric vehicles, as well as from electricity use in the residential, commercial, and industrial sectors

HOW WE GET THERE

Already on Our Way

- » Existing policies will increase renewable-based electricity use to 33 percent by 2020
- » California has more than doubled renewable capacity installed in the last four years (adding over 11,000 megawatts) and has more than 21,000 megawatts online, which includes 2,300 megawatts on 245,000 homes, businesses, and schools. The graph shows renewable energy procured for California from 1983–2013 by resource type and the steep increase in recent years.
- » Another 11,400 MW of renewable energy projects in California have received environmental permits for development
- » Recent costs for renewables – even without subsidies – are approaching levels competitive with new natural gas plants
- » California has achieved this level of renewable development and maintained the reliability of the electricity grid by developing the capability to integrate the current levels of weather-dependent generation (wind and solar). Moving to 50 percent renewable energy could make balancing electricity

demand and generation increasingly challenging at some times during the day and year. Therefore, additional tools will be needed to maintain reliability including: charging zero emission vehicles at times of high renewable production, balancing supply and demand over broad geographic areas by multistate agreements (such as the Energy Imbalance Market), increasing flexibility in the generating fleet, deploying emerging storage technologies and programs that reward customers for shifting demand, and building a smarter grid.

Build on California's Climate Change Framework

A 50 percent renewables target can be reached in several ways, including:

- » A new utility procurement requirement that focuses on optimizing clean energy technologies, efficiency, and demand management programs according to costs and system benefits.
- » A new procurement requirement to increase renewables beyond 33 percent, including allowing for rooftop solar and better coordination with Western states and Baja California to maximize renewable energy production and better balance production with demand.
- » A clean energy standard requiring reductions in greenhouse gas emissions of electricity sold in California based upon the loading order.

CALIFORNIA RENEWABLE ENERGY GENERATION BY RESOURCE TYPE (IN-STATE AND OUT-OF-STATE)

